Doosan

Doosan Lathe

Memo

*** CUT BLANK ON CHOP SAW AT 18.125" LONG***

TURN AS PER DWG DWG REV: N/C FOLIO REV: W/

DEBURR

120

QC2- Inspect parts off machine FAI/FAIB

0.00

12/12/19

12/12/19

Q̈́C

Quality Control

Memo

0.00

Page 1

Insp.

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Work Order:					·	DISPOSITION		AGAINST DEPARTMENT/PROC⊾					
Part N	Part No. NCR No. Root Des					Rework Scrap Use-as-is Work Order Update	The	Skid-tube Crosstube Machining Small Fab Prod. Eng. Coor. Thermoforming Finishing Rec/Store/Packaging Supplier Supplier					
Root		·			Descri	ption of work order update	Initial	Act	ion	Sign &			
Cause		Date	Step	Qty	(or Non-conformance	Chief En	g Descr	ription	Date	Verification	QC Inspector	
Doc/Data													
Equip/Tooling	_												
Operator	_												
Material	_												
Setup	_												
Other	_												
Process	_												
Supplier	-												
Training	_												
Unapproved							AULT CAT	TCODY	*				
Landir						General	AULI CAI	EGURY			•		
Landin		ear Bending				Bend	Grain			Ovalized		Pressure/Forced	
	_	Centre No	t Concer	tric to		BOM/Route	Hardy			Over/Under	tolerance	Temperature/Cure	
		Centre No Cracks	CONCE	iti it to	·, ·	Broken/Damaged	\vdash	ction Incomplete	 	Part Incorre	—	Weld	
		Crushed/C	rimped			Burrs		ctions incomplete/l	Inclear	Part Lost/Mi	· -	Wrong Stock Pulled	
	_	Cuffs	pcu,			Contamination		tenance	-	Part Moved		1 2	
		Heat Treat	t		<u> </u>	Countersink	Mislal			Positioned V	Vrong		
	-	Inspection		Tube		Cut Too Short	Misre			Power Loss/		Other	
	_	Ripples in	•			Drill Holes	Offset		<u> </u>	, ,	- L	<u> </u>	
		Drawing	${oldsymbol{ol}oldsymbol{oldsymbol{oldsymbol{oldsymbol{oldsymbol{oldsymbol{oldsymbol{oldsymbol{oldsymbol{oldsymbol{oldsymbol{ol}oldsymbol{oldsymbol{oldsymbol{oldsymbol{ol}}}}}}}}}}}}}}}}$	f Calibration				1. (A. (A. (A. (A. (A. (A. (A. (A. (A. (A					
		Finish	Out o	f Sequence									
Wave/Twist in Tube			Folio	Outsid	Outside Dimensions								

October-31-12 1	1:20:20 AM									
Item ID: 6 Revision ID:	547.2010			Accept	*N900	04010	n* s	Setup Star	*NS	31 *
Item Name:	Strut							Stop	*N.	52*
Start Date: 1	0/31/12	Start Qty: 4.00	*4*		Cust Item II	D:				
Required Date: 1	1/12/12	Req'd Qty: 4.00	* 4 *		Customer:			•		
Reference:			-							t
Approvals:	Process Pla	n:	Date:	Tooling:	Da	te:	.	Run Star	" 1/1	₹1*
	QC:		Date:	SPC (Y/N):	Da	te:		Stop	*NF	₹2*
Sequence ID/ Work Center ID		Operation Description		Set Up/ Run Hours	Tool ID	Tool # Plan		Reject Qty	Reject Number	Insp. Stamp
170		QC8- Inspect parts - seco	ond check	0.00	<i>à</i> 11					
170 QC		Memo		0.00	12/12/0	23	4	_B_		
Quality Control									*	
175	ļ			0.00						
175							4	7/3	13-	1-4/
HandFinish		Memo		0.00						/
Hand Finishing		CLEAN PA	RT AND REMOVE ALI	MARKING						
							- 1.00 m	Į.		
180	:	Outsource process-Anod	ize per OSI017 4.1.10.1	0.00					1	
120		PURCHASING			•			V//.	3-01-	رر ہے ۔
Outsource4	† ·	Memo	16620	0.00					$\frac{1}{2}$	
Outsource process - A	nodize	Issue P/O:	18829	ANODIZE AS PER D	WG		3.			

NCR:	Yes	/ No				WORK ORDER NON-	100	NFORI	MANCE / UPD/	ATE '	L		· ·
											QA Closed:	Dat	e:
Work Orde	er: _					DISPOSITION Rework	7		Skid-tube .	_	EPARTMENT/	PROCESS Water Jet	
Part I	•		<u> </u>			Scrap Machining Small Fab Use-as-is Thermoforming Finishing			Crosstube Small Fab Finishing Composite	Prod Rec/Stor	Engineering Quality Other		
D 1	_		1	1	Deseri			امندنما	Actio		Cian 9	· •-	
Root		Date	Step	Otv	l .	ption of work order update or Non-conformance		Initial iief Eng			Sign & Date	Verification	QC Inspector
Cause Doc/Data	\dashv	Date	step	Qty	'	or Non-comormance	Ci	nei chg	Descrip	itton	Date	Vernication	QC Inspector
Equip/Tooling	Н												
Operator	H	¥.											
Material	\vdash	•											
Setup	\dashv												
Other													
Process	\Box												
Supplier	\vdash												
Training	Н						1						
Unapproved													1
· · · · · · · · · · · · · · · · · · ·			<u> </u>		·	F	AUL	T CATE	GORY				
Landi	ng G	Gear				General							
		Bending				Bend		Grain			Ovalized		Pressure/Forced
		Centre No	ot Concer	ntric to	o/s	BOM/Route		Hardwa	re		Over/Under	tolerance [Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorred	rt [Weld
		Crushed/	Crimped.			Burrs		Instruct	ions Incomplete/Un	clear	Part Lost/Mi	ssing	Wrong Stock Pulled
		Cuffs				Contamination		Mainte	enance		Part Moved	_	
		Heat Trea	it			Countersink		Mislabe	eled		Positioned V	/rong _	<u></u>
		Inspection	n Strip in	Tube		Cut Too Short		Misread	i		Power Loss/	Surge [Other
		Ripples in	Bend			Drill Holes		Offset				,	
į		Torque W	/aves in E	xtrusio	n 🗀	Drawing		Out of (Calibration				

Out of Sequence

Outside Dimensions

Date: _

DQA:

Turning Sequence

Wave/Twist in Tube

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

92516

Page 3

Item ID: Revision ID:	647.2010			Accept	*N90	0040	100)* s	Setup Star	i Vi	S1*
Item Name:	Strut								Sto	*N	S2*
Start Date:	10/31/12	Start Qty: 4.00	*4*		Cust Ite	m ID:					
Required Date:	11/12/12	Req'd Qty: 4.00	*4*		Custom	er:					,
Reference:			_								į
Approvals:	Process Pla	ın:	Date:	Tooling:		Date:		F	Run Stai	!/	R1*
	QC:		Date:	SPC (Y/N):	****	Date:			Stop	*N	R2*
Sequence ID/ Work Center II)	Operation Description		Set Up/ Run Hours	Tool I	D Tool#	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190		Receive & Inspect for D	amage & Mat'l Certs	0.00						'	
190 Packaging		Memo		0.00					10/	3/2/14	4
Packaging		Ensure certi	ficate of conformity is att	ached							
200 *200* QC		QC5- Inspect part comp	leteness to step on W/O	0.00 13.3	- ට ට			4			
Quality Control											₹
²⁰¹				0.00				Ч	Ø	Ø	Al :
SprayPaint Spray Painting		Memo PRIME AS	PER DWG	0.00							13-4-
		CARDINAL	4860-50 PRIMER RAT	CU. 124204							

									DQA:	Date:	·
NCR:	es / No				WORK ORDER NON-O	CONFOR	MANCE / UPDAT	Έ , ί		~	SC.
				······································					QA Closed:	Date	, ,
Work Orde	ar.				DISPOSITION		A	AGAINST DE	PARTMENT,	PROCESS	
Part N					Rework Scrap	4 I	Skid-tube Crosstube Machining Small Fab			Water Jet	Engineering Quality
NCR N	10		· 		Use-as-is Work Order Update	Thern	~ —	inishing mposite	Rec/Stor	e/Packaging Supplier	Other
Root				Descri	ption of work order update	Initial	Action		Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief Eng	Descriptio	n	Date	Verification	QC Inspector
Doc/Data											
Equip/Tooling					,1	}					
Operator	*										
Material											· ·
Setup											
Other											·
Process											
Supplier											
Training		}									
Unapproved		<u> </u>									
					F/	AULT CATE	GORY				
Landir	ng Gear			_	General				٦	_	7
	Bending			<u></u>	Bend	Grain			Ovalized		Pressure/Forced
ļ	Centre No	ot Conce	ntric to (o/s	BOM/Route	Hardwa			Over/Under	tolerance	Temperature/Cure
,	Cracks				Broken/Damaged	Inspect	on Incomplete		Part Incorred	et	Weld
]	Crushed/	Crimped.			Burrs	-	ions Incomplete/Uncle	ar	Part Lost/Mi	ssing	Wrong Stock Pulled
	Cuffs				Contamination	Mainte	enance		Part Moved		
	Heat Trea	it			Countersink	Mislabe	led		Positioned V	Vrong	_
Ĺ	Inspection	n Strip in	Tube		Cut Too Short	Misread	1		Power Loss/	Surge	Other
	Ripples in	Bend			Drill Holes	Offset					

Out of Calibration

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Quality Control

Memo

QC

0.00

									DQA:	Date:	
NCR:	res / No				WORK ORDER NON-O	CONFORM	MANCE / UPI	DATE			٠ ٠
	·				·		···		QA Closed:	Date:	
Work Orde	ar.				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
WOIR Olde					Rework	7 	Skid-tube	Crosstube	1	Water Jet	Engineering
Part N	No.				Scrap	4 I	Machining	Small Fab	Pro	d. Eng. Coor.	Quality
		1			Use-as-is	Therm	noforming	Finishing	Rec/Sto	re/Packaging	Other
NCR N	No				Work Order Update		Large Fab	Composite]	Supplier	
Root				Descri	ption of work order update	Initial	Act	tion	Sign &		
Cause	Date	Step	Qty	(or Non-conformance	Chief Eng	Descr	ription	Date	Verification	QC Inspector
Doc/Data				:							
Equip/Tooling											
Operator											
Material											
Setup	<u>. </u>										
Other `									ł		
Process											İ
Supplier		1									
Training											
Unapproved											
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Landir	ng Gear	•			General				_		_
	Bending				Bend	Grain			Ovalized		Pressure/Forced
	Centre N	lot Conce	ntric to (o/s	BOM/Route	Hardwa	re		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged	Inspecti	on Incomplete		Part Incorre	ct	Weld
	Crushed	/Crimped.			Burrs	Instruct	ions Incomplete/l	Unclear	Part Lost/M	issing	Wrong Stock Pulled
ſ	Cuffs				Contamination	Mainte	nance		Part Moved		_
	Heat Tre	at			Countersink	Mislabe	led		Positioned V	Vrong	
	Inspection	n Strip in	Tube		Cut Too Short	Misread	I		Power Loss/	Surge	Other
	Ripples ii	n Bend			Drill Holes	Offset			-		•

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

October-31-12 11:26:25 AM

Work Order ID:

92516

Parent Item:

647.2010

Parent Item Name:

Strut

Start Date: 10/31/12

Required Date: 11/12/12

Start Qty: 4.00

Required Qty: 4.00

Comments:

IPP REV:A NEW ISSUE 12-10-09 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6R0.563 6061-T6 ROUND BAR .5	63	Purchased	No				f	219.3000		6.315789	5		
ovor to Roomb Bruch				Location		Loc Qty	<u>Lo</u>	c Code					
				MAT		2.5						•	
				123	218	2.5							
				MAT012		216.8							
				123	294	12.8							
				123	483	204							DAn

13 28

124029

8 At

12/12/19

												DQA:	Da	ate:	•
NCR:	Yes	/ No				WORK ORDER NON-O	COI	NFORM	MANCE / UP	DATE	•		_	•	•
								,			_	QA Closed:	Da	ate:	
Work Ord	or.				ļ	DISPOSITION				AGAINST D	ιEl	PARTMENT	PROCESS		
WOIK OIG	- -					Rework	Ī		Skid-tube	Crosstube	\neg	1	Water Jet		Engineering
Part I	Nο					Scrap	1		Machining	Small Fab	\dashv	Pro	d. Eng. Coor.	\vdash	Quality
	•					Use-as-is	1		noforming	Finishing	\dashv	1	e/Packaging	-	Other
NCR I	No.					Work Order Update	1		Large Fab	Composite	٦		Supplier		
	•						•		· [·	_	:			
Root					Descri	ption of work order update		Initial	Ac	tion	7	Sign &			
Cause		Date	Step	Qty	C	or Non-conformance	Ct	nief Eng	Desc	ription	_	Date	Verificatio	'n	QC Inspector
Doc/Data	Ш		 												
Equip/Tooling	Ш		}								-				
Operator	Ш]								
Material	Ш														
Setup	Ш										-				
Other	Ш														
Process	Ш										-				
Supplier	Ш										-			- 1	
Training	Ш										-				
Unapproved							<u> </u>								
						F	ΑUL	T CATE	GORY						· ··
Landi						General		1		_	_	,		_	•
	-	Bending			ļ	Bend		Grain			-	Ovalized			Pressure/Forced
	Ш	Centre No	ot Concer	itric to (D/S	BOM/Route		Hardwa				Over/Under	tolerance		Temperature/Cure
l İ	\vdash	Cracks				Broken/Damaged	_	Inspecti	on Incomplete			Part Incorred	:t		Weld
	Ш	Crushed/0	Crimped.			Burrs		Instructi	ions Incomplete/	Unclear		Part Lost/Mi	ssing		Wrong Stock Pulled
		Cuffs				Contamination		Mainte	nance			Part Moved			
		Heat Trea	t			Countersink		Mislabe	led			Positioned V	/rong		
		Inspection	Strip in	Tube		Cut Too Short		Misread				Power Loss/	Surge		Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Ripples in Bend

Turning Sequence

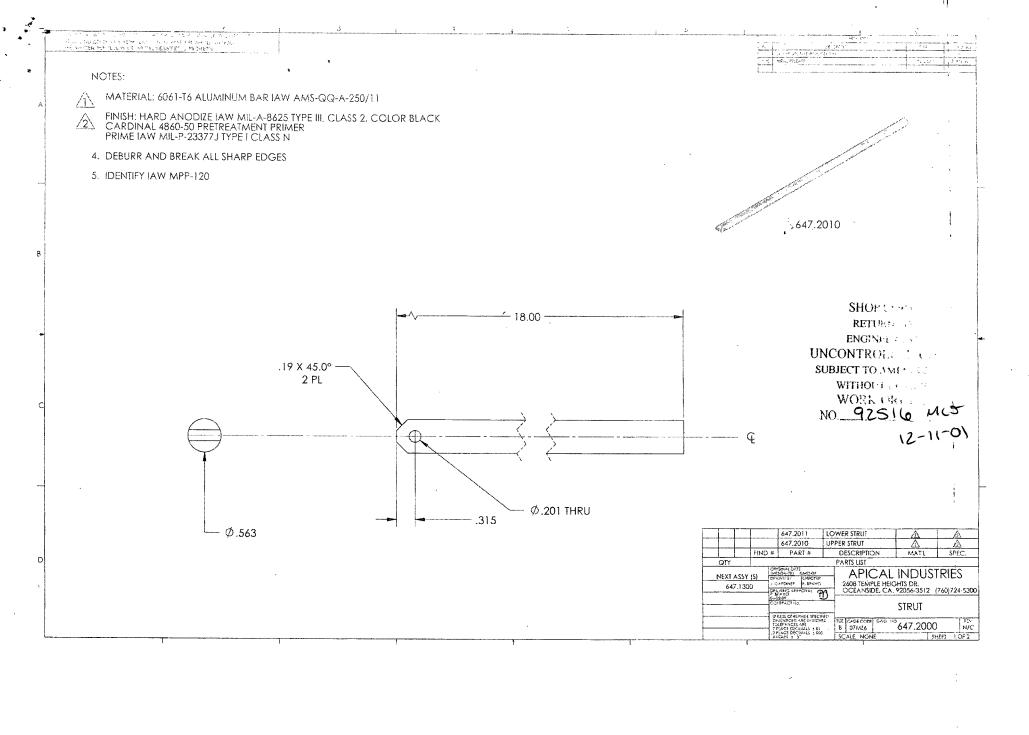
Wave/Twist in Tube

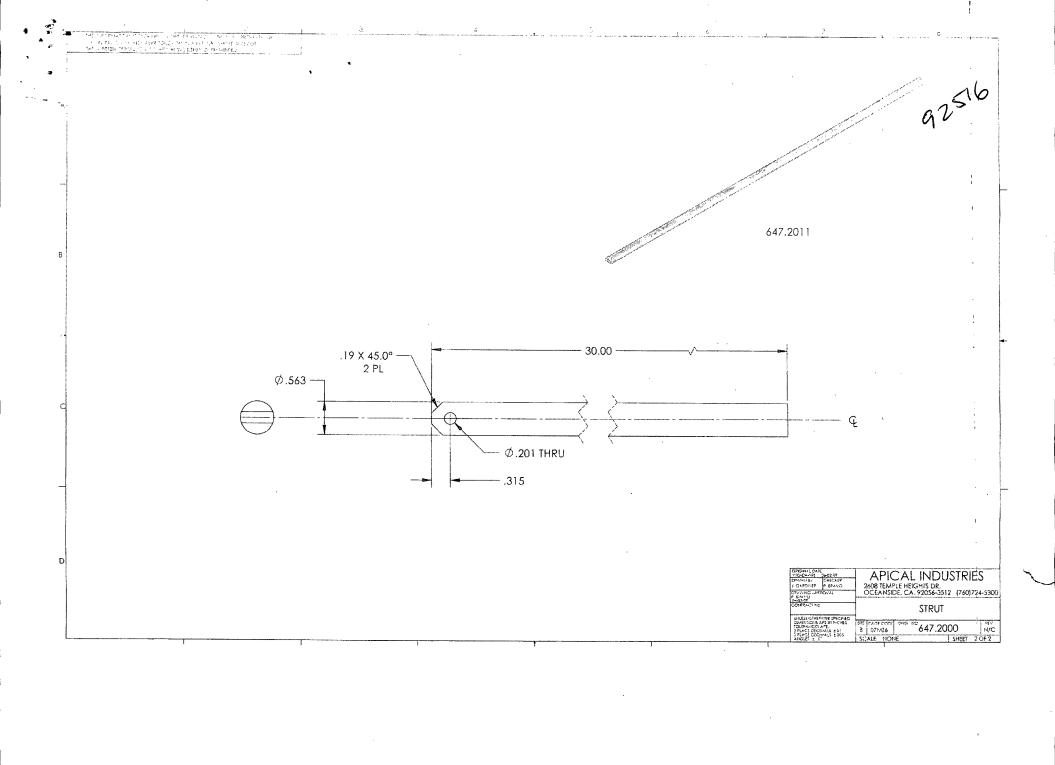
Torque Waves in Extrusion

Drill Holes

Drawing

Finish





DART AEROSPACE LTD

Description: STAT

Part Number: 647.2010

Inspection Dwg: 647.2007 Rev: NJC

Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of inspection	Comments
0.563	±.005	0.563			211-2	Volh
.19 X45°	010/-,50	.19x45°				4
3/5	±,005 ±,005	-3/4				
18.00	±.010	12.755			24" Ve/4	2nd 0A
	.010					J.
·						·

Measured by:	3	Audited by:	onl	Preliminary Approval:	
	118	Date:	12/12/23	Date:	

Rev	Date	Change	Revised by Approved
E	10.04.14	Added preliminary approval	KJ KJ

\$ 10.04.1K



A.T.G. Industries Inc. 731, rue Industrielle Rd. PLATING DEPARTMENT Rockland, On K4K 1T2 Canada

Ph: (613) 446-4544 Fax: (613) 446-4556

Pack List

Number: 62212

Date: 13-Feb-13

Ship To

DART AEROSPACE LTD 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7

Canada

DART AEROSPACE LTD 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 Canada

Ph: 613-632-5000

To

111. 013-032-3	200 Fax: 613-632-1185	5	Ph: 613-632-5200	Fax: 613-632-1185	
Terms		Ship Via			
Quantity	Description				
1 lot	Part: ASST 4.PCS 647.2010 14 PCS 647.2011 4 PCS 646.9910 4 PCS 647.1813 3 PCS 647.7915 8 PCS 649.4816 170 PCS 646.9910 30 PCS 646.3715 4 PCS 647.7914 14 PCS 646.3713 41 PCS 649.4813 4 PCS 647.1910 16 PCS 646.9710 HARD ANODIZE BLACK MIL-A-8625 TYPE III CLASS 2 Job: 20130090	PO: PO18829	Rev:		
	Certificate of Co A.T.G. Industries certifies that all items with all requirements, specifications an ISO 9001 : 2008 RE ATG SALES-2010 T DATE :	s in this shipment are nd drawings reference EGISTERED	in conformance d in the purchase order.		